gravel bar in a small stream within the city limits of Patterson, Wayne Co., Missouri, July 11, 1960.

Since there is some doubt as to the specific placement of the nymphs, they are not assigned to the type series. The Type 1 nymph was collected with the holotype. The two Type 2 nymphs were taken in a gravel bar in a tributary of the Kiamichi River approximately one mile north of Albion, Pushmataha Co., Oklahoma, July 9, 1961.

The holotype will be deposited in the Chicago Natural History Museum, a paratype female will be placed in the United States National Museum.

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## Further Notes on West African Lycaenidae (Lepidoptera) [1]

Harry K. Clench, Section of Insects, Carnegie Museum, Pittsburgh 13, Pennsylvania

**Spindasis (Lipaphnaeus) leonina paradoxa** Schultze

*Spindasis paradoxa* Schultze 1908, Societas Entomologica 23: 130 (rainforest nr. Kiliwindi (Mungo R. region) and Assam (upper Cross R. region), N. W. Cameroun).

*Spindasis leonina paradoxa:* Aurivillius 1923, *in* Seitz, Grossschmett. Erde 13: 416.

*Crudaria leonina bitje,* ♀ form *paradoxa:* Peters 1952, Checklist Butterflies Ethiop. Reg.: 110.

*Male.* As in *bitje* except that the fore wing orange patch is smaller, not reaching $Cu_2$ and with its base only about as wide as $\frac{1}{3}$ the inner margin length. Hind wing tornus with the inner of the two usually inconspicuous silver spots markedly edged with black distally. Underside with basal area a little darker and duller, but not as much as in *l. leonina;* hind wing tornus with a conspicuous black spot in lobe.

*Female.* As in *bitje,* but with the black edge on the tornal silver spot as in male. Underside with basal yellow about as in *bitje;* tornal black spot as in male.

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This subspecies is in most respects about intermediate between nominate *leonina* Sharpe and *leonina bitje* H. H. Druce, though, on the whole, closer to the latter. I have seen no topotypic or near-topotypic material but a pair, male and female, is before me that agrees in nearly every respect with Schultze's description, from near Mombasa, Kenya (*leg.* W. Doherty). Despite the wide difference in locality I am inclined to consider them one and the same. It is not the first instance of a close link between East Africa and the northwestern Cameroun region.

How Peters ever made a "female form" of this I cannot understand. Schultze described it from two males!

*Note.* Both M. Henri Stempffer, of Paris, and Mr. T. H. E. Jackson, of Kitale, Kenya, have expressed (*in litt.*) great doubt regarding the occurrence of *Spindasis leonina* in the Mombasa area. The strong suspicion of mislabelling which their weighty opinion thus raises is, however, tempered by other factors, too numerous and involved to be gone into in this note. Let it suffice to conclude that the record of this characteristic West African rainforest species from the Mombasa region must be considered dubious, but it is not as yet to be rejected outright.

**Aphnaeus chapini** Holland

This name is not listed by Aurivillius in Seitz (*ca.* 1924, relevant parts), nor in Wallace Peters' 1952 Check List, nor by Stempffer 1954 (*Aphnaeus* revision).

Similar to *asterius* and, according to Stempffer, with indistinguishable male genitalia; but sympatric with it (see below) and with the following apparently constant differences:

Upper surface of male brown (not the black of *asterius*), usually without any iridescent scaling at all, but in the West African race with small patches of comparatively dull, pale greenish scaling (not brilliant greenish blue as in *asterius*) on both wings; hind wing tornus broadly orange and the fore wing tornus may also have orange, the tails orange, tipped with white (in *asterius* there is no tornal orange and the tails are black with white tips).

Under surface of male bright orange (not the dark ruddy orange brown of *asterius* males), the markings usually feeble,

though fairly well developed in the West African race; practically identical with those of *asterius,* including even the distobasally streaked postmedian spot in $M_2$–$M_3$ of fore wing.

Three rather distinct subspecies are discernible:

**Aphnaeus chapini chapini** Holland

*Spindasis chapini* Holland 1920, Bull. Am. Mus. Nat. Hist. 43: 225, pl. 12, fig. 6 (Niangara, prov. Stanleyville, Congo).

Despite the fact that it is located geographically between the other two subspecies, this is an extreme of the three, in the male with the markings below entirely obsolete save for (a) the basal cell spot, middle pair of cell spots and cell-end dash, all on the fore wing, all black without white centers; (b) a grayish inner marginal shade below the fore wing cell and vein $Cu_2$, black next to the cell, not reaching termen; (c) a subtornal dash on the hind wing, black with white center, from *2A* to inner margin, basad of the black tornal lobe; and (d) the faintest trace of a black line, parallel to the last and basad of it. On the upperside agreeing with the next in having an orange tornal suffusion on the fore wing below $Cu_2$, lacking any metallic scaling above and with the tails bright orange to their white tips.

The holotype male is in the American Museum of Natural History; a male paratype is in Carnegie Museum (C.M. Ent. type series No. 450).

**Aphnaeus chapini ugandae** Stempffer (new status)

*Aphnaeus asterius* subspecies: Stempffer 1954, Trans. R. Ent. Soc. London 105: 516.

*Aphnaeus asterius ugandae* Stempffer 1961, Ann. Mus. Roy. Afr. Centr. (8°), 94: 59, pl. 4, figs. 7, 8 (Masaka, Sango Bay, Katera, Uganda).

Differs from nominate *chapini* in the more developed pattern below, including in addition to the visible spots in *chapini,* several elements of the fore wing postmedian series, the peculiar, basally elongated, arched member of this series below $Cu_2$ conspicuously white centered; and chiefly costal and tornal elements

on the hind wing. As in *c. chapini* the upper surface of the male has a conspicuous tornal orange patch on the fore wing and lacks any metallic scaling whatever.

**Aphnaeus chapini occidentalis** new subspecies

Differs in these particulars (male): underside pattern elements still more developed than in *ugandae,* with the hind wing discal and postmedian elements present (disposed about as in *asterius*), all these markings conspicuously white centered, the black edging prominent only in basal half of fore wing and costal area of hind wing. A conspicuous hind wing element is a transverse bar between *2A* and inner margin, long, silvery white with a narrow black edging. Surprisingly enough this is not the homologue of the similar bar evident on *c. chapini* below, but rather of the faint black line basad of the latter. The prominent bar in *c. chapini* finds its homologue in *occidentalis* in a more distal, inconspicuous black line of irregular shape, with a few internal white scales. In *ugandae,* according to Stempffer's figure, the inner bar is the larger (as in *occidentalis* but lacks white scaling within. On the upper surface there is no tornal orange on the fore wing and on the hind wing the tornal orange patch does not extend costad of $Cu_2$, though well surpassing that vein (where the shorter of the two tails arises) in *c. chapini* and *c. ugandae.* Pale, not particularly lustrous, greenish scaling occurs on the fore wing as a small cuneiform patch in the extreme base of the cell and on the hind wing in the discal area between $M_3$ and $Cu_2$, extending basad as far as, but not into, the cell and distally to within a millimeter or so of the termen, this latter scaling diffuse and patchy.

*Length of fore wing:* 14, 14.5 mm.

*Holotype,* male, and one male *paratype,* Efulen, Cameroun, *leg.* H. L. Weber (C. M. Acc. 8190), respectively 2.iv.1925 and 4.x.1925. C.M. Ent. type series No. 451.

**Cupidesthes paludicola** Holland

(= *brunneus* Smith & Kirby, NEW SYNONYMY)

*Lycaena paludicola* Holland 1891, Psyche 6: 52 (Kangwé,

Ogové R., Gabon); Aurivillius 1898, Rhop. Aethiop.: 381 (*species incertae sedis*); *ibid.* 1925, *in* Seitz, Grossschmett. Erde 13: 496 (*species incertae sedis*).

*Lycaenesthes brunneus* Smith & Kirby 1893, Rhop. Exot. 2: 106, Afr. Lycaen. pl. 23, figs. 13, 14 (locality not given); *et auctorum.*

*Cupidesthes brunneus:* Bethune-Baker 1910, Trans. Ent. Soc. London 1910: 13; *et auctorum.*

There is a curious and interesting bit of confusion here, which it is possible to clarify, thanks in great part to the remarks of Smith and Kirby (*loc. cit.*). The events, apparently, were as follows: Holland in 1891 published the description of *Lycaena paludicola,* based on a single specimen. Some time later he sent this specimen (along with material of other species) to Smith and Kirby, who described and figured it as new, believing it to have been unpublished. It had been their intention, apparently, to use for it the "manuscript" name *paludicola* (which was probably on the pin-label), but through an oversight the plate was caused to bear the name *brunneus* and this name they accordingly used in the text, duly noting and apologizing for the slip. For some reason, despite Smith and Kirby's mention of the name, *paludicola* has been an unknown entity ever since. This single specimen, thus, has the unusual distinction of being the holotype simultaneously of both *paludicola* and of *brunneus.* It now bears C.M. Ent. type series No. 452.

It is perhaps worth noting that because of Aurivillius' mention of the name in 1898 and 1925, *paludicola* cannot be considered a *nomen oblitum* and that Art. 23(b) of the *Int. Code Zool. Nomencl.* (1961) is therefore inapplicable.

**Anthene rubricincta** Holland

(= *musagetes* Holland, NEW SYNONYMY)

*Lycaenesthes rubricincta* Holland 1891, Psyche 6: 51 (Kangwé, Ogové R., Gabon); Smith & Kirby 1893, Rhop. Exot. 2: 100, Afr. Lycaen. 22, figs. 11, 12; Bethune-Baker 1910, Trans. Ent. Soc. London 1910: 21; Aurivillius 1923, *in* Seitz, Grossschmett. Erde 13: 438.

*Lycaenesthes musagetes* Holland 1893, Ent. News 4: 25 (Kangwé, Ogové R., Gabon); Bethune-Baker 1910, Trans. Ent. Soc. London 1910: 21, pl. 5, fig. 5.
*Lycaenesthes* (or *Anthene*) *musagetes: auctorum.*

The name *musagetes* was based on a male and in the nearly 70 years since its proposal only males have been known.[2] In contrast, the name *rubricincta* was based on a female (as Aurivillius, *loc cit.*, suspected; Holland erroneously described it as a male), only a few of which—and no males—have ever been found. Comparison of the types of the two names and of considerable supplemental material (including a second female) reveals an almost spot for spot agreement of the under surface pattern. This in conjunction with the similar female of *ituria* (see below) leaves little room for doubt that *musagetes* and *rubricincta* are one and the same species. The types of these names now bear C.M. Ent. type series Nos. 453 (*rubricincta*) and 454 (*musagetes*).

**Anthene ituria** Bethune-Baker
*Lycaenesthes ituria* Bethune-Baker 1910, Trans. Ent. Soc. London 1910: 22, pl. 1, fig. 4, pl. 5, fig. 6 (Beni, Makala and Mawambe, Congo).

A useful discriminating trait of this species, otherwise very similar to *rubricincta* (= *musagetes*), is the thinner postmedian line below, particularly on the fore wing and the reduced or absent dislocation of $M_3$ on that wing.

Two nearly topotypic males (Butembo, Kivu Distr., Congo, *leg.* Ch. Seydel) are at hand, as well as a male from Efulen, Cameroun (*leg.* H. L. Weber), a male from Queen Elisabeth Park, Uganda (*ex* T. H. E. Jackson) and two males and a female from Bundibugyo, Bwamba, Uganda (*ex* T. H. E. Jackson).

The female bears, as do males, a strong resemblance to *rubricincta,* and differs from the female of that species in the same

[2] Farquharson (1922, Trans. Ent. Soc. London "1921": 381) reared a female from the flowers of *Pterocarpus esculenta* (Leguminosae) in southern Nigeria, but gave no description of it.

way as do males: the thinner postmedian line of both wings below, on the fore wing not disjunct at $M_3$, on the hind wing tinged with reddish; ground color below darker brown. In addition the purely female trait of large orange terminal patch on hind wing above also differs slightly, being rather thicker in the middle, very nearly attaining the cell-end in the vicinity of $M_3$ and $Cu_1$.

## A Preliminary Study of the Acaridiae (Acarina, Sarcoptiformes) of Colorado

P. R. P. Pillai and Paul W. Winston,[1] Department of Biology, University of Colorado

Despite the economic importance of many members of the supercohort Acaridiae, little work has been done on the group in the United States. For this reason, a preliminary list of the species found in Colorado will be useful even though the acarid fauna of the region is very sparse. The relatively few specimens which we are recording are in the Acarology Collection of the University of Colorado. Specimens were collected from more than 500 samples (chiefly soil extractions) utilizing standard methods. These samples were from many parts of the state, but the bulk of our records are from Boulder County.

Major contributions to the taxonomy of this group have been made by Michael (1901), Oudemans (1924 and 1927), Zakhvatkin (1959), Vitzthum (1943), and Nesbitt (1945), but the most recent and comprehensive treatment of the subject is by Hughes (1961). In this paper, we have followed the last author's system as far as possible.

### ACARIDAE Ewing and Nesbitt, 1942.

Acaridae Ewing and Nesbitt, *Proc. Biol. Soc. Wash.* 55: 121, 1942.

### TYROPHAGUS Oudemans, 1923.

*Tyrophagus* Oudemans, *Ent. Ber.* 6: 250, 1923.

**Tyrophagus putrescentiae** (Schrank)

*Acarus putrescentiae* Schrank, *Enum. Insect. Austr.* #1057, 1781.

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